Novice-AI Music Co-Creation via AI-Steering Tools for Deep Generative Models

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Abstract

While generative deep neural networks (DNNs) have demonstrated their capacity for creating novel musical compositions, less attention has been paid to the challenges and potential of co-creating with these musical AIs, especially for novices. In a needfinding study with a widely used, interactive musical AI, we found that the AI can overwhelm users with the amount of musical content it generates, and frustrate them with its non-deterministic output. To better match co-creation needs, we developed AI-steering tools, consisting of Voice Lanes that restrict content generation to particular voices; Example-Based Sliders to control the similarity of generated content to an existing example; Semantic Sliders to nudge music generation in high-level directions (happy/sad, conventional/surprising); and Multiple Alternatives of generated content to audition and choose from. In a summative study (N=21), we discovered the tools not only increased users' trust, control, comprehension, and sense of collaboration with the AI, but also contributed to a greater sense of self-efficacy and ownership of the composition relative to the AI.